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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,081	10/21/2005	Wenhao Wang	KINW-01	4483

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WOOD, HERRON & EVANS, LLP
2700 CAREW TOWER
441 VINE STREET
CINCINNATI, OH 45202

EXAMINER	
PO, MING CHEUNG	
ART UNIT	PAPER NUMBER
1797	

MAIL DATE	DELIVERY MODE
12/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/554,081	WANG, WENHAO	
	Examiner	Art Unit	
	MING CHEUNG PO	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 10 August 2009 and 10 September 2009 have been entered.

Office Action Summary

2. This is the response to amendment for application filed on 9/10/2009.

3. Claims 1-10 and 12-15 are pending and have been fully considered.

Claim Rejections - 35 USC § 101

4. Claims 9-10, 12-15 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility. There is no scientific basis to believe a fuel oil that is nonpolar would be affected by a magnetic field. There is also evidence to suggest that magnetized fuel savers do not have a substantial asserted utility such as a FTC investigation provided on http://www.ftc.gov/opa/2006/08/savegas.shtm.

Claims 9-10, 12-15 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a well-known asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 112

5. The terms "conventional" and "big clusters" in claim 9 are relative terms which render the claim indefinite. The terms "conventional" and “big clusters” are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-9 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petroleum Products Handbook.

Gasoline is taught in pp 4-8 of the petroleum products handbook to be a mixture almost exclusively of hydrocarbons such as C_5 to C_{12} hydrocarbons. Since the length of one carbon atoms is of the order of the angstroms. It would be obvious to one of ordinary skill that even 12 carbon atoms would be smaller than 3.0 nm.

Regarding claim 5, diesel oil is well known to be in the range of 8-24 carbons per molecule.

Regarding claim 6, kerosene is well known to be comprised of molecules with 6 to 16 carbon atoms per molecule.

Fuel oils such as gasoline, diesel oil, kerosene, heavy oil or bio-diesel contain

molecules that are less than 10 nm. For gasoline, diesel oil, kerosene and heavy oil, the hydrocarbons that make up these fuel oils are hydrocarbons ranging from 5 carbon atoms for gasoline to 60+ carbon atoms for heavy oil. The atomic radius of carbon is 70 pm. A straight chain carbon hydrocarbon would therefore have a radius of about 350 pm.

Regarding claims 13 and 14, fuel oils such as gasoline that pass through a magnetic field would exit with the same properties since hydrocarbon fuels such as gasoline is nonpolar and there is no reason to believe that they would be affected by a magnetic field. Therefore, fuel oil that is prepared by the present method 9 is the same fuel oil that was fed into the magnetic field.

Claim Rejections - 35 USC § 103

8. Claims 9-10, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WENHAO (CN ZL94113646.9) in view of DOLAN (U.S. 5,985,153).

The present application teaches that WENHAO teaches a dual cavity magnetized fuel saver with three cylindrical magnets. **Two magnets with N poles facing each other with a gap of 0.5** – 2.0. The magnets used may be made of NF30H material and its intrinsic coersivity is **18000-20000 Oersted** with the N pole face magnetic field intensity of 4,000-5,200 Gauss. One magnet is placed inside of the magnetic filter cavity.

Although WENHAO does not teach a gap of less than 0.5 mm, it would be obvious to one of ordinary skill in the art to use a gap that is less than 0.5 mm.

One of ordinary skill in the art would expect that a gap that is smaller would

produce a larger air gap magnetic field.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

WENHAO does not appear to explicitly teach a magnetic field gradient of at least 1.5 tesla/cm in a direction intersecting with the magnetic force lines of a magnetic field intensity of at least 8000 Gauss.

However, DOLAN teaches an apparatus for separating, immobilizing, and quantifying biological substances by employing a high internal gradient magnetic capture structure.

The two inventions are analogous art because they are both concerned with the use of magnetic fields to separate particles in a liquid medium.

DOLAN teaches in lines 49 – 50 of column 1 that internal high gradient magnetic separators have been employed for 50 years and in lines 60 – 61 that gradients as high as **200 kGauss/cm** are easily achieved.

It would be obvious to one of ordinary skill in the art to apply the magnetic field gradient that DOLAN in the magnetic filter cavity that WENHAO teaches

The motivation to do so can be found in lines 50-51 of column 1 of DOLAN, which teaches that an internal magnetic field may remove weakly magnetic materials from slurries,

WENHAO still does not teach a magnetic field intensity of 8,000 Gauss.

However, it would be obvious to one of ordinary skill in the art to use at least a magnetic field intensity of at least 8,000 Gauss.

The motivation to do so is a reasonable expectation of success by increasing the magnitude of the magnetic field.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claims 1-8 and 13-15, WENHAO does not seem to explicitly state the size of the gasoline particles in the dual-cavity magnetized fuel saver.

However, the same process should yield the same product.

WENHAO teaches a substantially similar process.

There is no reason to believe that the fuel saver that modified WENHAO teaches does not produce a fuel oil that contains substantially the same properties as the present claims.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Response to Arguments

9. Applicant's arguments filed 8/10/2009 and 8/21/2009 have been fully considered but they are not persuasive. Applicant has tested one type of gasoline and concluded that placing a magnetic field and running a fuel oil through it would cause the particles of the fuel oil to be no greater than 10nm. This is unsupported by scientific fact. Fuel molecules that are nonpolar such as gasoline molecules would not be influenced by a magnetic field.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MING CHEUNG PO whose telephone number is (571)270-5552. The examiner can normally be reached on 9:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ming Cheung Po/
Patent Examiner

/Ellen M McAvoy/
Primary Examiner, Art Unit 1797